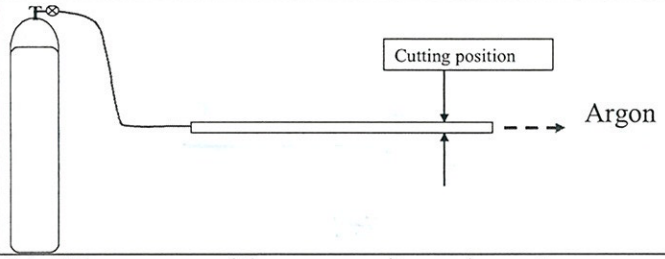
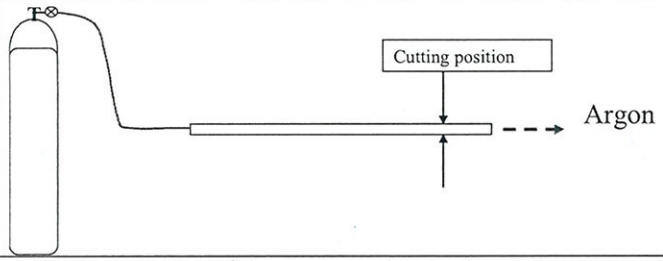
	Tube cutting procedure sheet		company: NLR		date: 26/02/2009	
	Fill in by hand.		engineer: J.v.E		location: Miaoli Tech.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			V
2	Record pipe part drawing number	ET5998-08-19.9			APS piece ~~DPS piece~~	V
3	Make picture of part	Record picture time as on photo			~~14:42~~	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-	Picture 14:42 feb2	Metabo deburring equipment. 0227400	
7	Record filter type	Manufacturer/filter size	0.45 µm		BST 12 impuls purge weld gas	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-		3 LPM	

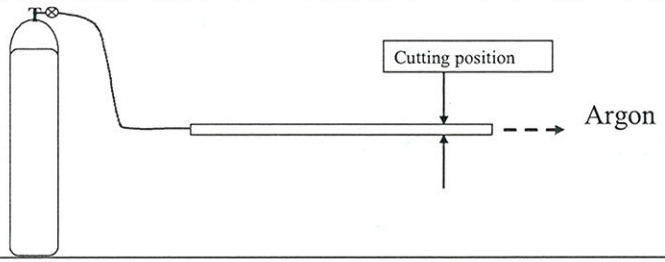
Deburring with. Quality products techway 14:43 feb 26. 2009
scr. no. 040681. Cordless driver 14:43 feb. 26. 2009

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
					14:36 20/02/2009	√
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		3 LPM	√
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside			Purge gas flow	√
12	Cut tube					√
13	Make picture of set-up and record picture time					√
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				√
15	Cover tube end with caps and store in a clean box or clean environment for further integration					√
16	End cutting of part (mention part number at comments)					√

	Tube cutting procedure sheet		company: NLK		date: 26/oc/2009	
	Fill in by hand.		engineer: J.v.ES		location: Niaoh Frel	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			V
2	Record pipe part drawing number	ET5998-08-199.			DPS Piece	V
3	Make picture of part	Record picture time as on photo			15:34 just after Ok bussing	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		Metabo cutting 0227400	
7	Record filter type	Manufacturer/filter size	0.45 µm			
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

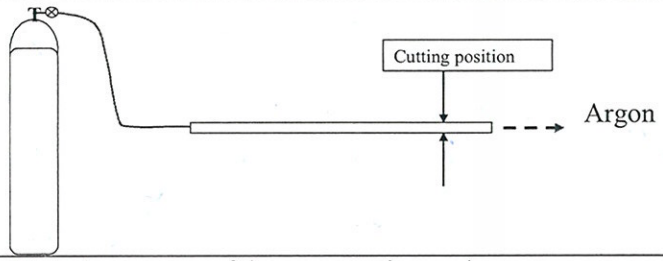
	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
					15:36 26/02/2009	√
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		5 LPM	√
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			√
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside			5 LPM	√
12	Cut tube					√
13	Make picture of set-up and record picture time				15:~~35~~ 34	√
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				√
15	Cover tube end with caps and store in a clean box or clean environment for further integration					√
16	End cutting of part (mention part number at comments)					√

	Tube cutting procedure sheet		company: NLR		date: 26/oct/2009	
	Fill in by hand.		engineer: J. VEs		location: NT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		preheater	
2	Record pipe part drawing number		ET5998-124.3a.			
3	Make picture of part	Record picture time as on photo			17:13.	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		pipe cutter + deburr 04 681 pic 14:43 26/oct/2009	
7	Record filter type	Manufacturer/filter size	0.45 µm		purge with gas filter	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			-

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						√
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface			Spot welded together ends closed	
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

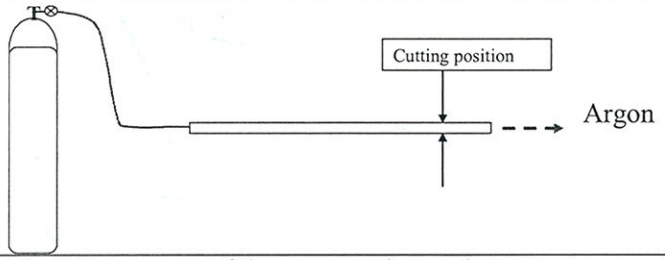
	Tube cutting procedure sheet		company: NLR		date: 26/02/2009	
	Fill in by hand.		engineer: J.v E		location: MT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		preheater	V
2	Record pipe part drawing number		ET599 S-12-43 4.3 b.		17:09. 26. 2009	V
3	Make picture of part	Record picture time as on photo				V
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				V
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-		Pip cutter	V
7	Record filter type	Manufacturer/filter size	0.45 µm		filter purge filled gas	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

ser. no 040681 (deburring)
See also 14:43 26/02/2009

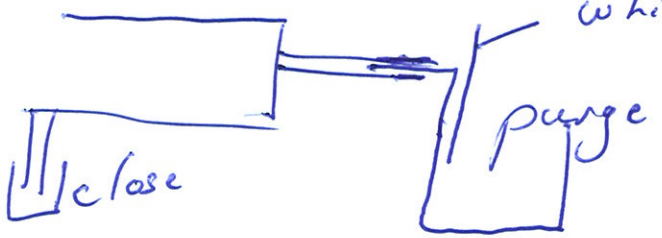
	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						√
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface			spot welded together caps ends	
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: NLR		date: 27/oct/2009	
	Fill in by hand.		engineer: J.v.Es		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-	J2	Pump in ~~out~~ left cutting	
2	Record pipe part drawing number				No drawing ∅	v
3	Make picture of part	Record picture time as on photo			13:30 27 Feb 2009	v
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			with additional tapping test	v
5	Clean outside tube with IPA and lint-free cloth					v
6	Record cutting equipment used	Manufacturer, type/serial number	-		13:30	v
7	Record filter type	Manufacturer/filter size	0.45 µm		Purge welding filter	v
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-	gas	during cutting no purging possible	v

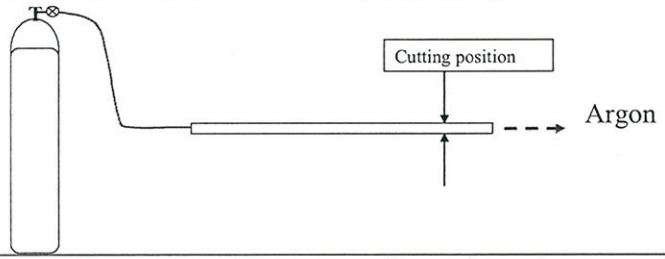
After cutting and deburring
1. Tapping on white cloth done
2. Purge with closed outlet with capillary tube
Additional tapping with white cloth behind → no particles found

	Tube cutting procedure sheet		company: NLR		date: 27/02/2009	
	Fill in by hand.		engineer: S.v Es		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
		1				
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		with capillary. ± 5 LPM	
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration				tape	v
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: NLR		date: 27/02/2009	
	Fill in by hand.		engineer: J.v.Es		location: MT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		pump inlet cutting	V
2	Record pipe part drawing number			J1	no drawing	V
3	Make picture of part	Record picture time as on photo			13:21, 13:25.	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				V
5	Clean outside tube with IPA and lint-free cloth				13:34	
6	Record cutting equipment used	Manufacturer, type/serial number	-		Deburring with Metabo 0227400	
7	Record filter type	Manufacturer/filter size	0.45 µm			
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-		No purging possible vertical cutting with gravity	

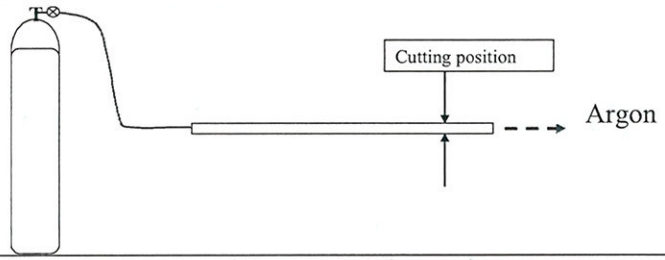


After cutting & deburring tapping on clean white cloth. Then a second check with capillary tube No particles detected.

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		same as J2 ±5 LPR.	v
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration				tape	v
16	End cutting of part (mention part number at comments)					

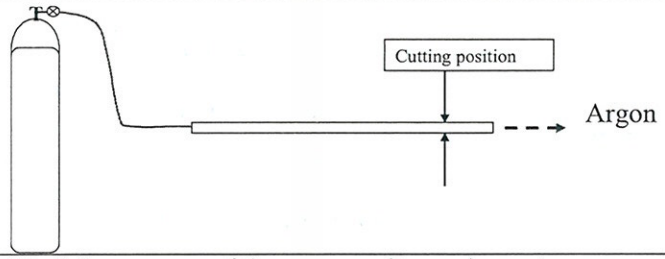
	Tube cutting procedure sheet		company:	NLR	date: 27/02/2009	
	Fill in by hand.		engineer:	J. v. Es	location: NT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		Pump outlet cutting	
2	Record pipe part drawing number	pump		J1	with pipe cutter	
3	Make picture of part	Record picture time as on photo			11:50 feb 27. 2009 121083	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				V
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-		deburring ~~cordless driver~~	
7	Record filter type	Manufacturer/filter size	0.45 µm		Purge gas filter welding equipment	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			V

+ Metabo 0227400 equipment

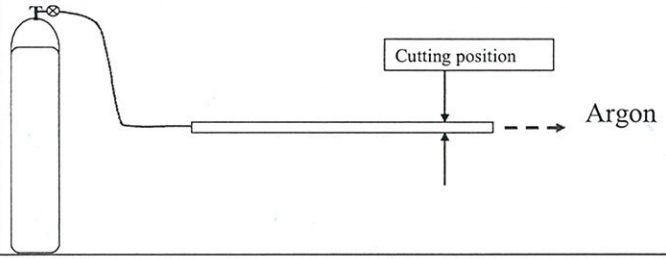
	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
					6 LPM	
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			√
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				√
12	Cut tube					√
13	Make picture of set-up and record picture time					√
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				√
15	Cover tube end with caps and store in a clean box or clean environment for further integration					√
16	End cutting of part (mention part number at comments)					√

	Tube cutting procedure sheet		company: NLR		date: 27/02/2009	
	Fill in by hand.		engineer: J.v.Es		location: NT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		Pump outlet.	
2	Record pipe part drawing number		pam 12.		cut with saw (particles!)	
3	Make picture of part	Record picture time as on photo			11:57 27 feb 2009	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			12:06	
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		Deburring with ser no 040681 cordless driver	
7	Record filter type	Manufacturer/filter size	0.45 µm		purge gas welding filter	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

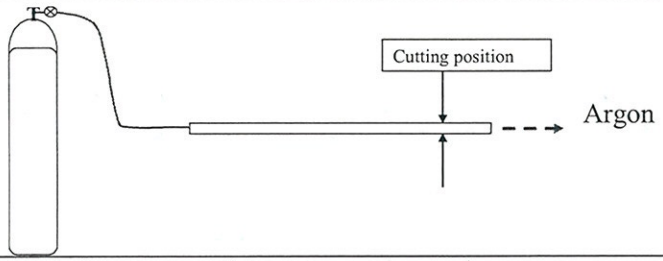
First deburring with Metabo 0227400

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		~ 5 LPM (just a small blow more.)	
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					V
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				V
15	Cover tube end with caps and store in a clean box or clean environment for further integration					V
16	End cutting of part (mention part number at comments)					V

	Tube cutting procedure sheet		company: NLR		date: 27/02/2009	
	Fill in by hand.		engineer: J.v. Es		location: MT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			
2	Record pipe part drawing number	ET 5998-08-19.19			to condenser return line	V
3	Make picture of part	Record picture time as on photo			13:53.	V
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				V
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		Metabo 0227400 deburring with cordless driver 040681.	
7	Record filter type	Manufacturer/filter size	0.45 µm		purge welded gas filter	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

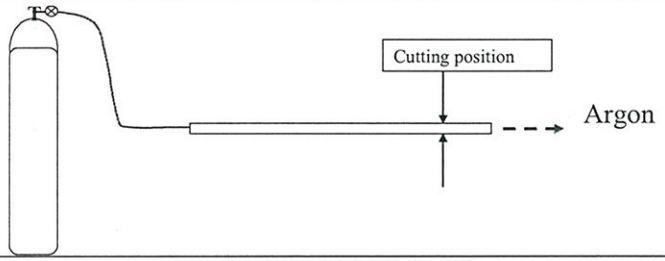
	Tube cutting procedure sheet		company: NLK		date: 27/02/2009
	Fill in by hand.		engineer: J. v Es		location: MT
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		16 LPM	V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				N
12	Cut tube				14:27 – 14:31	
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: NLR		date: 27/02/2009	
	Fill in by hand.		engineer: J.N.E.S		location: NT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			
2	Record pipe part drawing number	ET 5990-3-1 g. 18			bottom condenser return line	
3	Make picture of part	Record picture time as on photo			13:53	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		cut Metabo 022740 deburr cordless driver 040681.	
7	Record filter type	Manufacturer/filter size	0.45 µm		weld gas purge filter	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

	Tube cutting procedure sheet		company:		date: 27/02/2009	
	Fill in by hand.		engineer:		location: MT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
					10 LPM	V
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				V
12	Cut tube				14:34 ~~14:27~~	V
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

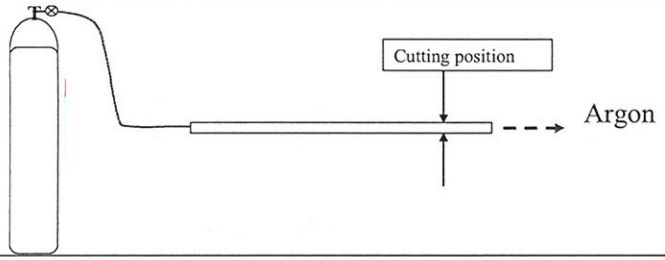
	Tube cutting procedure sheet		company: NLR		date: 27/02/2009	
	Fill in by hand.		engineer: ~~H~~ J.v.Es		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			V
2	Record pipe part drawing number	ET5998-02-	19.12			V
3	Make picture of part	Record picture time as on photo				
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			15:26	V
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-		Reitako + 022700 deburr 0465	
7	Record filter type	Manufacturer/filter size	0.45 µm		filter from wildpurge set-up.	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

Deburring internally with "vijl" clean check afterwards.

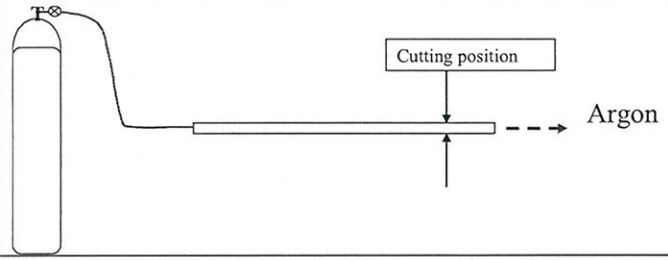
	Tube cutting procedure sheet		company:		date: 27/02/2009 HT	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						V
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		10 LPM	V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				V
12	Cut tube					V
13	Make picture of set-up and record picture time				see front page	V
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				V
15	Cover tube end with caps and store in a clean box or clean environment for further integration					V
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: NLK		date: 27/02/2009	
	Fill in by hand.		engineer: J.v. Es		location: MT-	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			
2	Record pipe part drawing number	ET 5998-08-19.17			Evaporator return line	
3	Make picture of part	Record picture time as on photo			15:23. 27/02/2009	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				V
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-		Metabo 0227400 + deburr. 040681	
7	Record filter type	Manufacturer/filter size	0.45 µm		purge weld gas set-up	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

Remark internal deburring with "vgt" cleanliness check afterwards

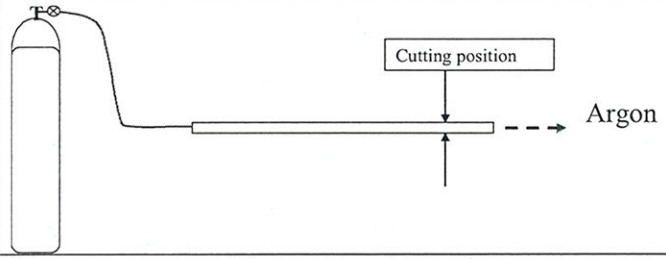
	Tube cutting procedure sheet		company:		date: 27/02/2009	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						V
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		10 LPM	V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				V
12	Cut tube					V
13	Make picture of set-up and record picture time				see first page	V
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				V
15	Cover tube end with caps and store in a clean box or clean environment for further integration					V
16	End cutting of part (mention part number at comments)				closed after welding	V

	Tube cutting procedure sheet		company: NLR		date: 27/02/2009	
	Fill in by hand.		engineer: J.v F.		location: MT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		Accu Peltier inlet outlet.	
2	Record pipe part drawing number				No drawing. 16:59.	v
3	Make picture of part	Record picture time as on photo			16:59	v
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				v
5	Clean outside tube with IPA and lint-free cloth					v.
6	Record cutting equipment used	Manufacturer, type/serial number	-		pipe cutter.	v
7	Record filter type	Manufacturer/filter size	0.45 µm		wetel set-up filter	v
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

	Tube cutting procedure sheet		company: NLK		date: 27/02/2009	
	Fill in by hand.		engineer: J.v.E.		location: HT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
					g L PR	V.
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside			16:59	V
12	Cut tube				17:04 t. 17:06	V
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				V
15	Cover tube end with caps and store in a clean box or clean environment for further integration				After fit check.	
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: NLR		date: 02 March 09	
	Fill in by hand.		engineer: J.v.Es		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model	-		APS Inlet cutting	
2	Record pipe part drawing number				dead end.	
3	Make picture of part	Record picture time as on photo			11:10 Mar. 2 2009	V
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			~~Atop~~	V
5	Clean outside tube with IPA and lint-free cloth				*	V
6	Record cutting equipment used	Manufacturer, type/serial number	-		pipe cutter * used	
7	Record filter type	Manufacturer/filter size	0.45 µm		Purged afterwards with capillary with weld gas filter.	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

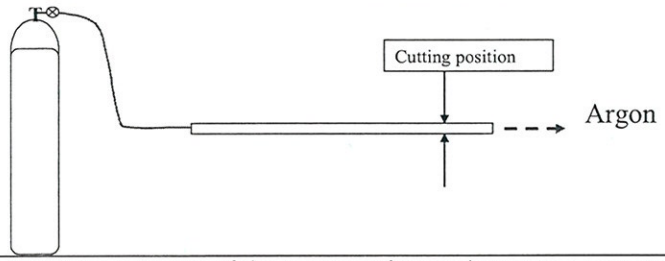
Deburring with Metabo cordless driver 040681 022700

	Tube cutting procedure sheet		company: NLR		date: 02/02/2009	
	Fill in by hand.		engineer: J. VES		location: NT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
						V
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		→ 10 L PM	V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside			11:11 11:14	V
12	Cut tube				11:20	
13	Make picture of set-up and record picture time				cleaned with tapping	
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface			and checked with capillary tube	V
15	Cover tube end with caps and store in a clean box or clean environment for further integration				covered by tape.	
16	End cutting of part (mention part number at comments)					V

	Tube cutting procedure sheet		company: NLR		date: 02 March 2009	
	Fill in by hand.		engineer: J.v. Es		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			V
2	Record pipe part drawing number	ET5999-08-19.7			special bend part as accu feed pip does not fit	
3	Make picture of part	Record picture time as on photo			11:06 ~~03~~ MAR. 2. 2009	V
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			see below a	
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-			
7	Record filter type	Manufacturer/filter size	0.45 µm		purge gas set-up.	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

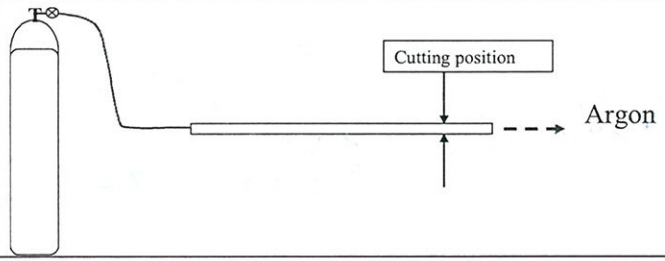
try 2) N.B re-opened again because of mal fit rebending ⇒ Re-check cleanliness (one particle shown in cross section) removed — check purge with cloth → ok 15:30 JvE.

try 1) complete part check on cleanliness after spot welding

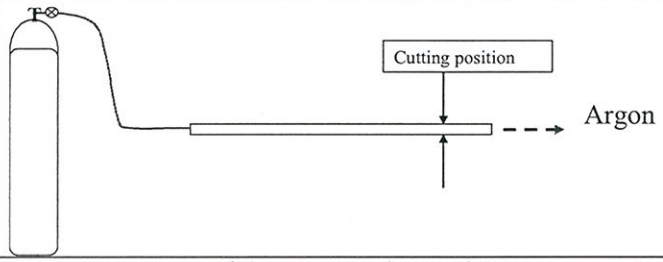
	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
					10 LPM during clean check.	
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				V
12	Cut tube					V
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				V
15	Cover tube end with caps and store in a clean box or clean environment for further integration				See pic 13:42	V
16	End cutting of part (mention part number at comments)				02/03/2009	

	Tube cutting procedure sheet		company: NLR		date: 02/03/2009	
	Fill in by hand.		engineer: J.v.Es		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		Peltier pipe inlet cutting	
2	Record pipe part drawing number		ET5998-08-4.3		connection to Elbow 43	
3	Make picture of part	Record picture time as on photo			13:07 F1	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			re-cut 14:02	V.
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-		Metabo + 0227400 debur equipment 040681	
7	Record filter type	Manufacturer/filter size	0.45 µm			
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

3/3/2009
After COH contamination cut tubes are inspected and they are oke!
3/3/2009 16:25.

	Tube cutting procedure sheet		company: NLR		date:	
	Fill in by hand.		engineer: J. v Es		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						√
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		4 LPM	√
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			√
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				√
12	Cut tube					
13	Make picture of set-up and record picture time				13:07 Mar.2.2009	√
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				√ 14:03 No picture
15	Cover tube end with caps and store in a clean box or clean environment for further integration					√
16	End cutting of part (mention part number at comments)					√

	Tube cutting procedure sheet		company: NLR		date: 03/03/2009	
	Fill in by hand.		engineer: J. v. Es		location: MP.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		pre-heater cleanliness check. cat	
2	Record pipe part drawing number					
3	Make picture of part	Record picture time as on photo			10:21 after cutting	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		pipe cutter	
7	Record filter type	Manufacturer/filter size	0.45 µm		Purge filter weld set-up	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			√

	Tube cutting procedure sheet		company:		date: 03/03/2009	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		5 LPM	
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					√
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				√
15	Cover tube end with caps and store in a clean box or clean environment for further integration				checked cleanliness of sample	√
16	End cutting of part (mention part number at comments)					

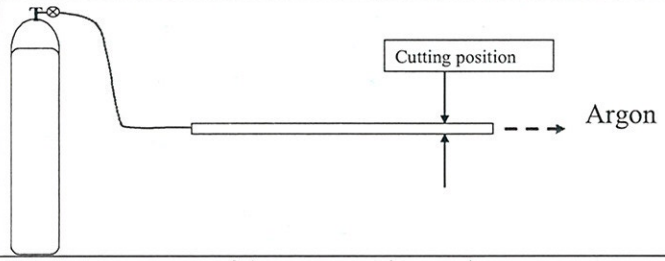
10:21 03/3/2009

COH contamination

	Tube cutting procedure sheet		company: NLR		date: 02/03/2009	
	Fill in by hand.		engineer: I.v.E		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		cold grbit heater inlet outlet cutting	
2	Record pipe part drawing number					
3	Make picture of part	Record picture time as on photo			17:07	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		pipe cutter + 2 times debur.	+
7	Record filter type	Manufacturer/filter size	0.45 µm		Purge set-up	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

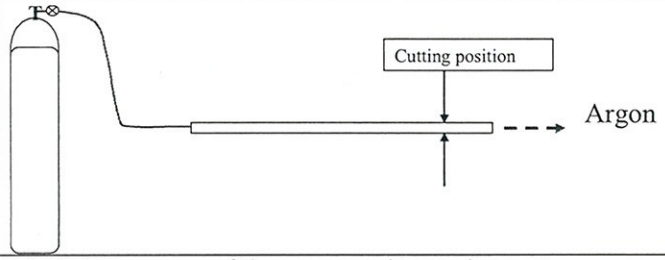
02 27 00 Metabo + cordless driver 040631

Remark: Visual inspection showed contamination Very likely caused by cleaning agent after soldering COH. The COH is cleaned by pumping IPA through it all night. Visual inspection showed cleanliness in the morning.

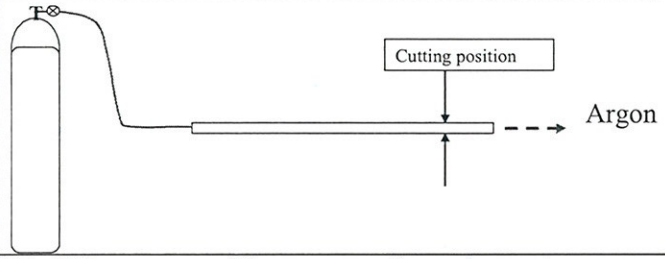
	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						√
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		10 LPM	√
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			√
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				√
12	Cut tube					
13	Make picture of set-up and record picture time				17:10 02/03/2009	
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: J.v. Es		date: 02/03/2009	
	Fill in by hand.		engineer: NLR		location: TT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		DPS ~~cu~~ ~~fix~~ to Peltier	√
2	Record pipe part drawing number	ET5990-008.		fig.6 fig.15.	pipe cutting	√
3	Make picture of part	Record picture time as on photo				√
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			clean unless checked afterwards with white cloth	
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-			
7	Record filter type	Manufacturer/filter size	0.45 µm		filtered purge of weld set-up	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

changed to visual inspection 3/3/'09
~~a/2/as~~

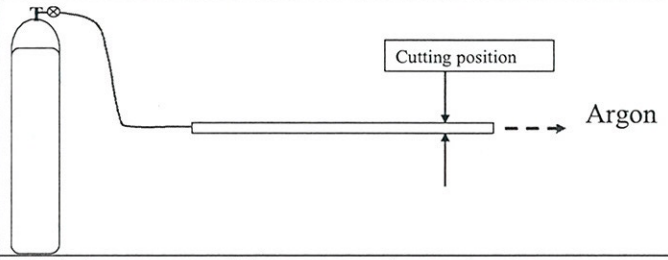
	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		Approx 2 L PM	V
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				V
12	Cut tube					V
13	Make picture of set-up and record picture time				N/A	V
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				V
15	Cover tube end with caps and store in a clean box or clean environment for further integration				clean bag	V.
16	End cutting of part (mention part number at comments)					V

	Tube cutting procedure sheet		company: NLR		date: 02/03/2009	
	Fill in by hand.		engineer: J.v.E		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2 ET599-08-19120	-		pump to APS-section	v
2	Record pipe part drawing number					.
3	Make picture of part	Record picture time as on photo				
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-			
7	Record filter type	Manufacturer/filter size	0.45 µm			
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

	Tube cutting procedure sheet		company: NLK		date: 03/03/2009	
	Fill in by hand.		engineer: J. v. E.		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

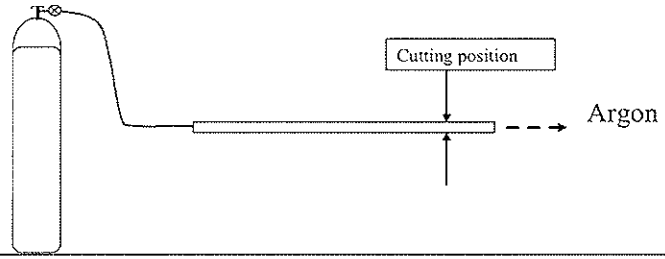
	Tube cutting procedure sheet		company: NLR		date: 03/3/2009	
	Fill in by hand.		engineer: J.v.Es		location: TT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		pump to condenser inlets	
2	Record pipe part drawing number	ET5900-0819.25				V
3	Make picture of part	Record picture time as on photo			13:48. 03 March 2009	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				V
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-		standard cutting equipment*	
7	Record filter type	Manufacturer/filter size	0.45 µm		purge gas	13:49.
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

* Taiwan Shang Yang Inductive motor cutting equipment for off-line tubes

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						√
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		6 LPM	√
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			√
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube				13:43	√
13	Make picture of set-up and record picture time					√
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				√
15	Cover tube end with caps and store in a clean box or clean environment for further integration					√
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: NLR		date: 03/03/2009	
	Fill in by hand.		engineer: J. v Es		location: HT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model	-		DPS HX side second outlet	
2	Record pipe part drawing number	ET5998-08-19.				
3	Make picture of part	Record picture time as on photo			14:27	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			No purge possible	
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		see * (below)	
7	Record filter type	Manufacturer/filter size	0.45 µm			
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

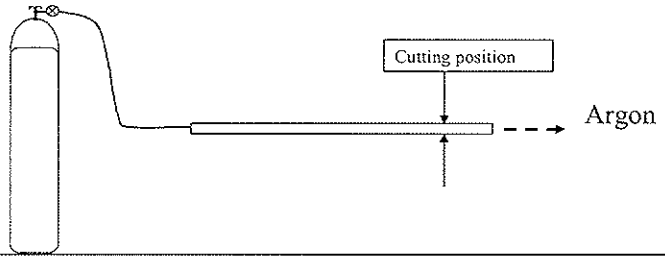
* Taiwan Shang Yang equip — picture
16:44 03/03/2009
18:58 03/03/2009
motor spec.

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
					clean checked afterwards with capillary purge	
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		6 LPM	capillary
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

no particles on cloth

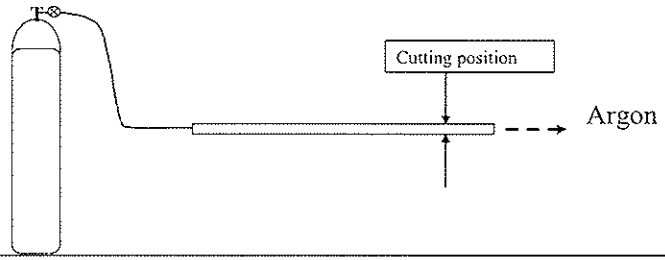
	Tube cutting procedure sheet		company: NLR		date: 3/3/2009	
	Fill in by hand.		engineer: J.v.E		location: HT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-		COH ~~inlet~~ to HX	v
2	Record pipe part drawing number		ET5998-219.23	19.10	section	v
3	Make picture of part	Record picture time as on photo			14:25 reach	v
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				v
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		~~Yang Shang~~ X	
7	Record filter type	Manufacturer/filter size	0.45 µm			
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

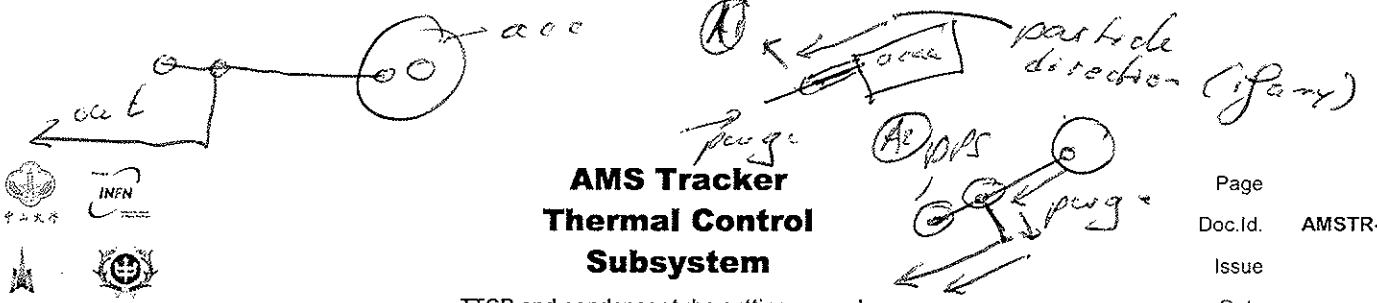
Taiwan Yang Shang equipment
picture 16:44 03/03/2009
13:58 motor spec

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

	Tube cutting procedure sheet		company: NLR		date: 3/3/2009	
	Fill in by hand.		engineer: J.v.Es		location: AT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model	- FM2			
2	Record pipe part drawing number		ET 599 S. od. 19.11.			
3	Make picture of part	Record picture time as on photo			16:16 (cutting)	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				V
5	Clean outside tube with IPA and lint-free cloth					V
6	Record cutting equipment used	Manufacturer, type/serial number	-			V
7	Record filter type	Manufacturer/filter size	0.45 µm			V
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			V

visual inspected parts after cutting with light. => ok-e

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					

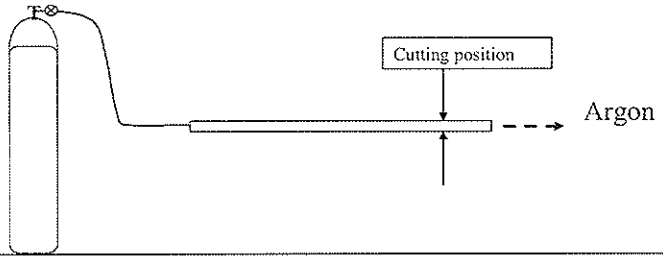


	Tube cutting procedure sheet		company: NLR		date: 04/03/2009	
	Fill in by hand.		engineer: J.v.Es		location: MT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model	- FM2		Fill pipe cutting to check 10 mm dead end weld.	
2	Record pipe part drawing number		① First cut with normal metal saw / purge via bkt-pump inlet section + vacuum cleaner			
3	Make picture of part	Record picture time as on photo			10:47 04 March 2009 - 11:15.	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease			② flat cutting with non-concentric Metabo cutter 14:01 14:02 also purge	√
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		Metabo 0227 oo	
7	Record filter type	Manufacturer/filter size	0.45 µm		purge gas filter MT.	√
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			√.

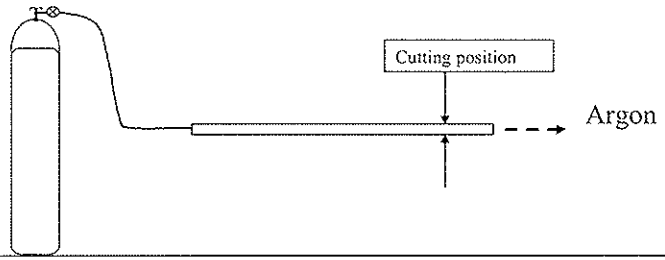
A) Cleaning performed by capillary tube into acce and tapping on acce. ~~Then~~ Acce enlet.
(A1) Same after with tube to DPS and to pump
(A2)

Cleaning of inside needed with lint-free cloth. √ done after APS/DPS/ dead end welding. Clean check performed

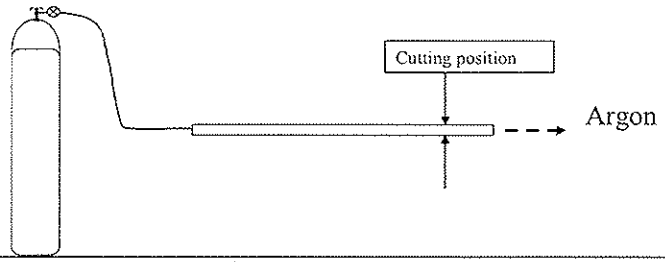
05/03/2009

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		deadend!	
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			V
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time				see. 04/03/2009 after dub.	
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				V
15	Cover tube end with caps and store in a clean box or clean environment for further integration					V
16	End cutting of part (mention part number at comments)					V.

	Tube cutting procedure sheet		company: NLR		date: 05/03/2009	
	Fill in by hand.		engineer: J.v., Es		location: MT.	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model FM2	-			√
2	Record pipe part drawing number	ET5998-08		19.21 19.22	Condenser Lines to COM.	√
3	Make picture of part	Record picture time as on photo			14:22	
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-		Metabo + chalker	
7	Record filter type	Manufacturer/filter size	0.45 µm		14:22 14:19	
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						✓
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar		6 LPM	✓
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				✓
12	Cut tube					
13	Make picture of set-up and record picture time				see foto's pg	✓
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				✓
15	Cover tube end with caps and store in a clean box or clean environment for further integration					✓
16	End cutting of part (mention part number at comments)					✓

	Tube cutting procedure sheet		company: NLR		date: 05/03/2009	
	Fill in by hand.		engineer: S. v. Es		location: MT	
Step	Action	Monitoring	Value	**Result**	Comment	√
1	Record model (FM1/FM2/QM) for which the cutting of tubes is performed	Model	-		pre-heater outlet cutting	
2	Record pipe part drawing number					
3	Make picture of part	Record picture time as on photo				
4	Perform visual inspection inlet and outlet tube	Clean/particles/ grease				
5	Clean outside tube with IPA and lint-free cloth					
6	Record cutting equipment used	Manufacturer, type/serial number	-			
7	Record filter type	Manufacturer/filter size	0.45 µm			
8	Connect the filter and a clean flexible (silicone) hose to a N_2-(or Argon)bottle delivering gaseous Argon gas as shown in figure.		-			

	Tube cutting procedure sheet		company:		date:	
	Fill in by hand.		engineer:		location:	
Step	Action	Monitoring	Value	**Result**	Comment	√
						
9	Limit the pressure of the gaseous nitrogen/argon to a reasonable flow (0-4bar) check the used pressure prior to connecting the tube part	Pressure	0-4 bar			
10	Flow gaseous nitrogen/argon through the hose prior to connect to the tube part		-			
11	Connect the flexible hose to the tube as shown in above figure. Set a fixed gaseous flow	Check flow at outside				
12	Cut tube					
13	Make picture of set-up and record picture time					
14	Disconnect tube, clean outside with IPA and lint free cloth & perform visual inspection of cut surface	Flat square surface				
15	Cover tube end with caps and store in a clean box or clean environment for further integration					
16	End cutting of part (mention part number at comments)					